

A NOVEL BIOACTIVE BETA-GLUCAN GEL AND ITS ROLE IN WOUND CARE, ILLUSTRATED THROUGH THREE CASE STUDIES

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Introduction

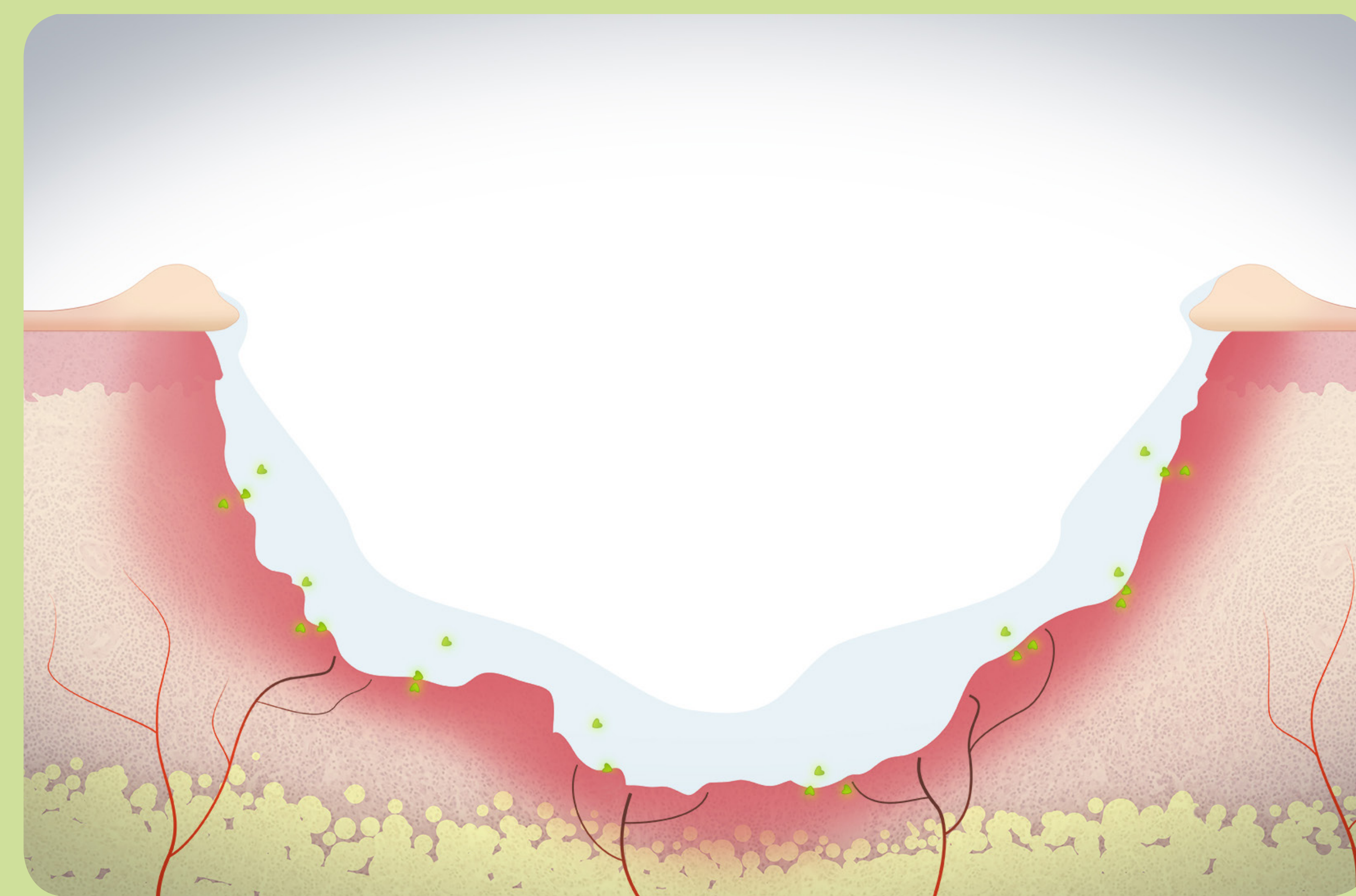
Beta-Glucans - what they are

The application of Beta-Glucans in health care has an extensive historical background. However, the application of Beta-Glucans in the management of wounds is a relatively recent event.

Beta-Glucans are natural polymers and found in the cell walls of: bacteria, yeast, fungi, algae, grain and seaweed.

Bioactive Beta-Glucan* Gel - what it does

- Provides a moist wound healing environment that aids autolytic debridement
- Attracts and stimulates phagocytic cells to produce cytokines, signal molecules and growth factors
- Increases wound contraction, angiogenesis and cell proliferation



Bioactive Beta-Glucan Gel

- A sterile, homogenous viscous gel containing soluble 1,3/1,6 Beta-Glucan, Glycerol, CMC and water in a 4 g tube
- Class III medical device that acts on phagocytic cells

Indications

- Dry and low to moderately exuding wounds where there is stalled healing

Application

- Cleanse wound prior to application
- Cover wound bed with Bioactive Beta-Glucan Gel, 2-5mm thick layer
- Cover with a secondary dressing e.g. film/foam
- Can be used under external compression and offloading devices
- Change dressing 2 X weekly or as clinically indicated
- Re-evaluate every 4 weeks

The gel is easy to apply, painless, can be used under compression or offloading and should be changed twice weekly.

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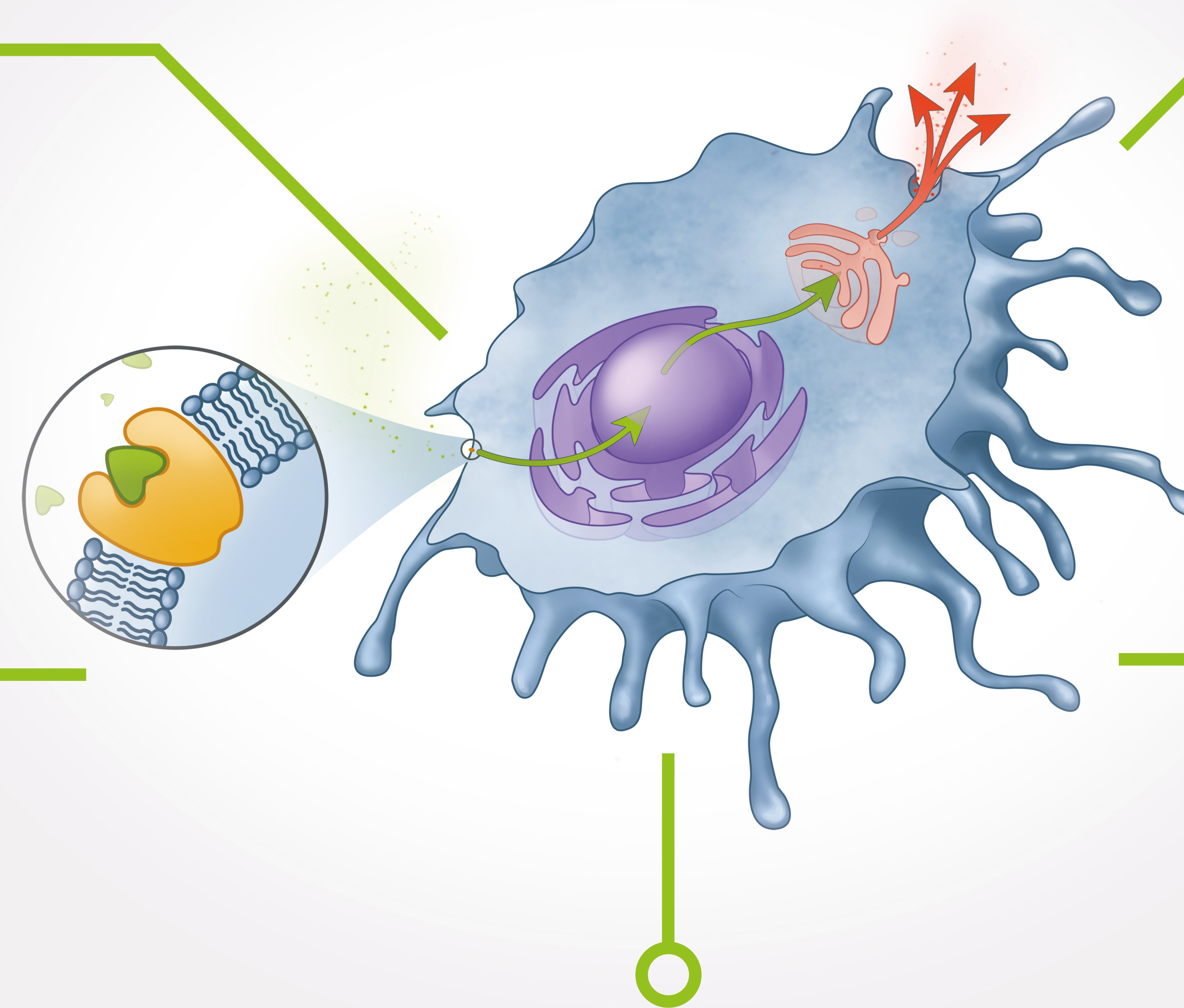
Beta-glucans and wound healing: activation of macrophages

Promotes wound closure

- re-epithelialisation and contraction

Expression of growth factors

- supporting cell proliferation, angiogenesis, deposition of extracellular matrix



Assists in resolution of wound inflammation

- removes neutrophils

Promotes wound healing

- plays a central role in all stages of wound healing
- orchestrates the healing process

Wound cleansing and debridement

- phagocytosis and production of proteolytic enzymes
- removes dead / senescent cells and pathogenic microbes

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Clinical evidence: three case studies

The progress of three patients with chronic lesions following intervention with Bioactive Beta-Glucan Gel

CASE #1

- A 76 year old female with a 12-month old, partial thickness, venous leg caused by trauma in the gaiter area.

Day 1 – the ulcer measured 2.5 cm X 1.7 cm, was mostly covered with de-vitalised tissue and had a 2 cm erythematous border. The ulcer had not received compression therapy. Wound edges were protected with a barrier film dressing, and the wound dressed with bioactive beta-glucan gel, covered with a low-adherent secondary dressing and a dressing pad and a short-stretch compression bandage applied. The dressing was changed on Day 4 and eight days after the first application of beta-glucan gel the ulcer was completely healed.



Day 1



Day 8

CASE #2

- A 76 year old male with systemic sclerosis and a lesion located near the 1st metatarsal head on the left foot had been present for 18 months.

Wound size 2 cm X 2 cm A variety of topical treatments including antiseptics and antibiotics had been tried. Treatment was changed to beta-glucan gel, applied weekly and covered with a low-adherent dressing and a non-woven pad. The wound was rapidly debrided and within 5 weeks the lesion had healed.



Day 0



Day 49

CASE #3

- A 49 year old female with a left lateral malleolar leg ulcer of unknown aetiology.

The wound started with a haematoma probably as the result of trauma. The ulcer was painful and had been present for 1 week. Some peri-wound erythema and oedema present. There were no comorbidities or medication and the ulcer had not received any advanced wound care/products.

Week 1 – some necrotic tissue, fibrin and dried blood was debrided. Moderate level of wound exudate, no malodour and no clinical infection. Wound measured 3.5 cm in diameter. Bioactive beta-glucan applied 2 X weekly for 2 weeks and a secondary dressing of silicone foam, no compression applied. Week 3, beta-glucan gel applied weekly.



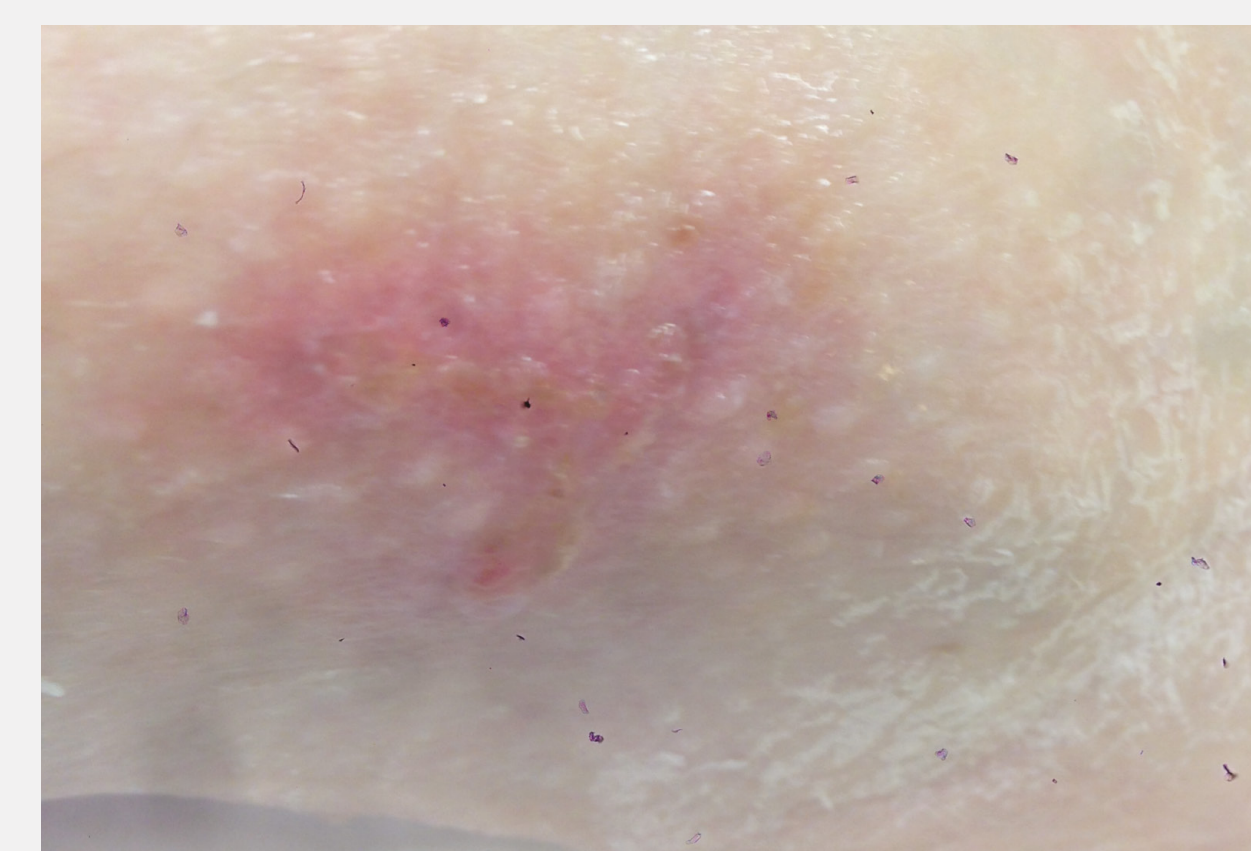
Week 1



Week 2 – Wound size reduced and granulating. Peri-wound erythema and oedema reduced. No debridement required. Beta-glucan gel applied.



Week 4 – Wound reduced in size and granulation tissue observed over 90% of wound bed. Beta-glucan gel applied.



Week 5 – Wound healed

- The patient found the dressing changes and application of beta-glucan gel comfortable and the staff found the dressing simple and easy to apply. Wound healed within 5 weeks without any adjuncts.

Conclusion

Bioactive Beta-Glucan Gel provides a highly credible alternative to other dressings that conform to the moist wound healing principle. This natural, yet technologically advanced dressing is easy to apply, comfortable for the patient and delivers accelerated healing in stalled wounds.

*Bioactive Beta-Glucan Gel is marketed as Woulgan®

- This poster was supported by an educational grant from Biotec Beta-Glucans, Tromsø, Norway

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